

BOSTON HARBOR, MASSACHUSETTS

DEBRIS STUDY

PLAN OF SURVEY NO. 2

(REVIEW OF REPORTS)

MAY 1968

DEPARTMENT OF THE ARMY

NEW ENGLAND DIVISION, CORPS OF ENGINEERS

WALTHAM, MASS.

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DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
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WALTHAM, MASSACHUSETTS 02154

IN REPLY REFER TO:

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May 1968

PLAN OF SURVEY NO. 2
FOR
BOSTON HARBOR DEBRIS STUDY

1. INTRODUCTION.

This plan of survey is a revision of the "Plan of Investigation No. 1" submitted to the Chief of Engineers by 1st Indorsement dated 7 June 1966. It sets out the procedures to be followed in determining the advisability of eliminating sources of drift and debris in Boston Harbor which are injurious to navigation.

2. AUTHORITY FOR STUDY.

This study is being made under authority of a resolution adopted 18 March 1966 by the Committee on Public Works of the United States Senate, which reads as follows:

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, that the Board of Engineers for Rivers and Harbors is hereby requested to review the reports of the Chief of Engineers on Boston Harbor, Massachusetts, published as House Document 225, Seventy-sixth Congress, 1st Session, and other reports, with a view to determining the advisability of eliminating the sources of drift and debris and other obstructions and injurious deposits that pollute the water of Boston Harbor, by removal and disposal of dilapidated structures and derelicts, and by other appropriate measures, along the shores of the harbor, and its tributary waters, that constitute possible obstacles or hazards, or produce damages to existing navigation."

Senator Edward M. Kennedy of Massachusetts sponsored this resolution.

3. DESCRIPTION OF STUDY AREA (Boston Harbor and its tributary waters).

a. General. Boston Harbor is located on the westerly side of Massachusetts Bay about 50 nautical miles northwest of the tip of Cape Cod. It comprises a tidewater area of about 47 square miles lying landward of a line from Point Allerton, Hull, to the tip of Deer Island, Boston. The study area will also include the following waters tributary to the harbor: Weir River, Weymouth Back River, Weymouth Fore River to lower dam, Town River, Neponset River to lower dam, Reserved Channel, Fort Point Channel, Charles River to lower dam, Little Mystic River, Mystic River to lower dam, and Chelsea River. In addition, it includes the outer harbor area encompassing Green and Outer Brewster Islands. The Port of Boston, located at the head of the harbor, is the largest seaport in New England, considered both from the standpoint of its waterfront facilities and the extent of its water-borne commerce, which in 1966 amounted to about 20 million tons. Boston is the principal distribution point for the commerce of Massachusetts, New Hampshire and Vermont, and it affords a short route between Europe and the interior of the United States and Canada. In this section of the country, the port serves as a gateway for the foreign and coastwise receipts of raw materials for a large industrial area producing machinery, textiles, rubber and leather goods, wood and petroleum products, and electronic equipment. Ten communities abut Boston Harbor. Proceeding clockwise from the south, they are: The towns of Hull, Hingham, Weymouth and Braintree; the cities of Quincy, Boston, Cambridge, Everett and Chelsea; and the town of Winthrop.

b. Existing Federal Navigation Projects. There are numerous existing navigation projects located within the harbor. The Boston Harbor project, adopted in 1825, provides for three deep-draft (27, 30, and 40 ft.) entrance channels in the outer harbor; a deep-draft main ship channel (35 and 40 ft.) in the inner harbor extending to the mouth of the Mystic River; a 40-foot deep anchorage in the vicinity of President Roads; deep-draft channels at Reserved Channel (35 ft.), Chelsea River (35 ft.), and the lower reach of the Charles River (35 ft.); and a shallow-draft channel (12 ft.) at Weir River (Nantasket Beach). In addition to the above project, there are a number of existing projects within or adjacent to the main harbor area. These include deep-draft channels at the lower reach of the Mystic River (35 ft.), Weymouth-Fore River and Town River (35 ft. authorized); and shallow-draft channels at Weymouth-Back River (15 ft.), Hingham Harbor (10 ft.), Neponset River (18 and 15 ft.), Malden River (6 ft.), and Winthrop Harbor (6 ft.).

c. Existing Corps of Engineers Debris Removal Program. Floating debris in Boston Harbor is presently being removed to a limited degree by a commercial firm under contract with the Corps. Limited funds (in recent years averaging \$15,000) to perform this work are allocated from Federal river and harbor maintenance funds. Harbor patrols of 4 hours duration are made regularly three times a week to pick up floating debris which could be harmful to navigation. Frequent additional patrols are made to pick up specific items of hazardous drift as directed on a 24-hour basis. The United States Coast Guard and Boston Harbor Police cooperate in retrieving hazardous drift. The program is not a satisfactory solution to the debris problem but it does serve to reduce the hazard to small boats.

4. IMPROVEMENTS DESIRED.

A public hearing was held in Boston on 11 July 1967 to provide all interests the opportunity to express their views and desires. About 60 people, representing local, State and Federal agencies and numerous private interests, attended. In general, the group expressed the following views and desires:

a. Floating debris in the harbor is a serious hazard to general navigation and impedes the normal growth of recreational boating activities in the area.

b. Major debris sources are the many dilapidated waterfront structures and derelict vessels in the harbor. These decaying structures are also an eyesore to the harbor. Their removal will enhance the value of the many harborfront development projects now under construction or in the planning stage.

c. A waterfront cleanup project, aimed at the elimination of all derelict vessels, dilapidated waterfront structures and other sources of floatable debris, is desired. In addition, the present debris collection program of the Corps should be expanded to assure a complete collection program.

5. STUDY OBJECTIVE.

The basic objective of the study is to determine whether authorization of a Federal project for the removal and disposal

of dilapidated structures and derelict vessels along the shores and waters of Boston Harbor, including its tributary waters, to eliminate sources of drift and debris that constitute possible obstacles or hazards or produce damages to existing navigation, is warranted at the present time. The study report will consider the engineering and economic feasibility of such removal and disposal work.

6. AVAILABLE PERTINENT DATA.

- a. U. S. Geological Survey "Quad Sheets."
- b. U. S. Coast & Geodetic Survey Charts Nos. 246 and 248.
- c. Report under review (see para. 2) and other Corps reports on navigation projects in study area.
- d. City of Boston - aerial photographs showing waterfront structures in the Boston section of the harbor.
- e. Massachusetts Department of Public Works, Division of Waterways - permit plans and data on certain tidewater structures.
- f. United States Coast Guard - data on derelict vessels.
- g. Municipal maps compiled by redevelopment, planning and assessment agencies.
- h. Massachusetts Area Planning Council - report on "Boston Harbor - a Sector of the Open Space and Recreation Development Program for Metropolitan Boston," Volume I of four volumes.

7. ECONOMIC STUDIES REQUIRED.

- a. Tabulation of damages occurring to commercial vessels and to recreational craft by floating debris.
- b. Tabulation of any debris collection and removal costs incurred by Federal, State or Municipal agencies, and by commercial or recreational navigation interests.
- c. Tabulation of property damages resulting from fires originating at dilapidated shorefront structures.

d. Evaluation of commercial and recreational navigation benefits, including possible marina developments or improvements, resulting from a waterfront cleanup project.

e. Evaluation of land enhancement along waterfront resulting from a cleanup project.

f. Tabulation of personal injuries or fatalities from boat collision with floating debris, derelict vessels, or dilapidated waterfront structures.

g. Environmental studies to ascertain all other possible intangible benefits.

8. ENGINEERING STUDIES REQUIRED.

a. Field surveys to determine:

(1) Re derelict vessels - number, location, water depth to vessel, type, size, condition, and quantity of potential drift. Also, owner's name and address if such information is available without extensive research.

(2) Re dilapidated shorefront structures - number, location, type, size, condition, present use, quantity of potential drift in structure, and ground photos. Also, owner's name and address if information is readily available.

(3) Location, quantity, kind of potential drift from debris lying along shore.

b. Investigation to determine quantities and types of floatable materials from illegal dumping of these materials directly into harbor.

c. Estimates of cost for removal and disposal of dilapidated shorefront structures, derelict vessels, drift from debris along shore and floatables dumped directly into harbor. Also, methods of such removal and disposal, including location of disposal operations.

9. LEGAL STUDIES REQUIRED

a. Compilation and review of existing Federal, State and Local laws, and current studies of changes thereto concerning:

- (1) Removal of derelict vessels from tidewaters
- (2) Removal of floating debris (rubbish) from tidewaters
- (3) Removal or rehabilitation of dilapidated shorefront structures.
- (4) Disposal of debris (rubbish) by burning or other means.

b. Review and determination of the rights and responsibilities of the owners of derelict vessels and dilapidated shorefront structures.

c. Determination as to the rights and responsibilities of Federal, State or local authorities to enter, alter, repair or remove and dispose of materials from such structures or derelicts.

d. Legal aspects of requirements of local cooperation that may be involved in the initial cleanup and subsequent maintenance of shorefront structures to minimize future drift.

e. Compilation of Federal, State and Municipal agencies' functions, duties and responsibilities in Boston Harbor, including its waters and shores, and statutory authority for same.

10. CONSTRAINTS AND CONTROLS

a. The study will include, and at this early stage it appears that it will be limited to, consideration of:

(1) Authorization of a Federal project for the removal and disposal of dilapidated structures and derelict vessels, and the collection and disposal of floating debris along the shores and waters of Boston Harbor, including its tributary waters, to eliminate sources of drift and debris, and

(2) Recommendations for local cooperation to include responsibility for maintaining the harbor in a cleaned-up condition.

b. The study area, as shown on the attached map, will be limited to Boston Harbor (water area landward of a line extending from Point Allerton to Deer Island) and its tributary waters, including Weir River, Weymouth Back River, Weymouth Fore River to lower dam, Town River, Neponset River to lower dam, Reserved Channel, Fort Point Channel, Charles River to lower dam, Little Mystic River, Mystic River to lower dam, and Chelsea River. It also includes the outer harbor island area encompassing Green and Outer Brewster Islands.

c. For the purpose of this study, the following glossary of words and terms will apply:

- | | | |
|----------------------|---|--|
| (1) Derelict vessels | - | abandoned and grounded vessels, boats or hulks of same. |
| (2) Debris | - | rubbish |
| (3) Floating debris | - | floating rubbish, solid pollutants. |
| (4) Dilapidated | - | fallen into partial ruin or decay or a state of disrepair. |

11. COOPERATION AND COORDINATION

As regional representative of the Chief of Engineers, the Division Engineer of the New England Division, Corps of Engineers, Department of the Army, has been assigned sole responsibility for the accomplishment of the study. The study will be closely coordinated with, and assistance will be sought from, the many Federal, State and Municipal agencies and other groups who have significant interest in Boston Harbor and its waterfront. Following is a listing of such agencies and groups:

Federal

- | | | |
|------------------------------|---|--|
| Department of Transportation | - | U. S. Coast Guard |
| | - | Bureau of Public Roads |
| Department of the Navy | | |
| Department of the Interior | - | Fish and Wildlife Service |
| | - | Bureau of Outdoor Recreation |
| | - | Federal Water Pollution Control Administration |

Federal (Cont'd)

Department of Housing and
Urban Development

Department of Commerce - Economic Development
Administration
- Maritime Administration

State (Commonwealth of Massachusetts)

Department of the
Attorney General

Department of Natural
Resources

- Division of Marine Fisheries
- " " Fish and Game
- " " Water Resources

Department of Public Works

- Division of Waterways
- " " Motorboats

Metropolitan Area Planning
Council

Municipalities

City of Boston - Executive, Legal and Public Works Departments;
Harbormaster; Boston Redevelopment Authority.

All other municipalities bordering the study area - Executive,
Legal and Public Works Departments; Harbor-
masters.

Others

Boston Harbor Pollution Committee
Massachusetts Bay Yacht Clubs Association

12. PUBLIC HEARINGS

a. A public hearing, attended by about 60, was held in Boston on 11 July 1967 to provide all interests the opportunity to express their views and desires previous to the actual start of the Corps investigation of field conditions.

b. It is planned to hold a public meeting, shortly before submission of the report to the Chief of Engineers, to present to local interests the study findings of the Division Engineer.

13. SCHEDULE OF ASSISTANCE AND REVIEW

In view of the nature of this navigation study, together with the fact that it is the first of its kind undertaken by the New England Division, it is anticipated that closer liaison than usual will be maintained with personnel of OCE for guidance, particularly on matters of policy and legal aspects.

14. WORK SCHEDULE

a. Progress to date - Public hearing was held on 11 July 1967. Ground photos have been taken of a large number of the dilapidated shorefront structures within the City of Boston portion of the harbor. Engineering, legal and economic studies are about 10% completed. A field survey of all waterfront structures in the harbor, estimated to take about 5 months to complete, was started on 24 April 1968.

b. Future schedule of operations is as shown on the inclosed work schedule chart. Subject to funding, the study and report are scheduled for completion by June 1970.

15. ESTIMATE OF COST

Funding requirements for the above schedule are as follows:

Allotted to date	\$40, 000
Fiscal Year 1969	30, 000
Fiscal Year 1970	<u>40, 000</u>
Total	\$110, 000

16. RECOMMENDATION

APPROVAL RECOMMENDED:

JOHN WM. LESLIE
Chief, Engineering Division

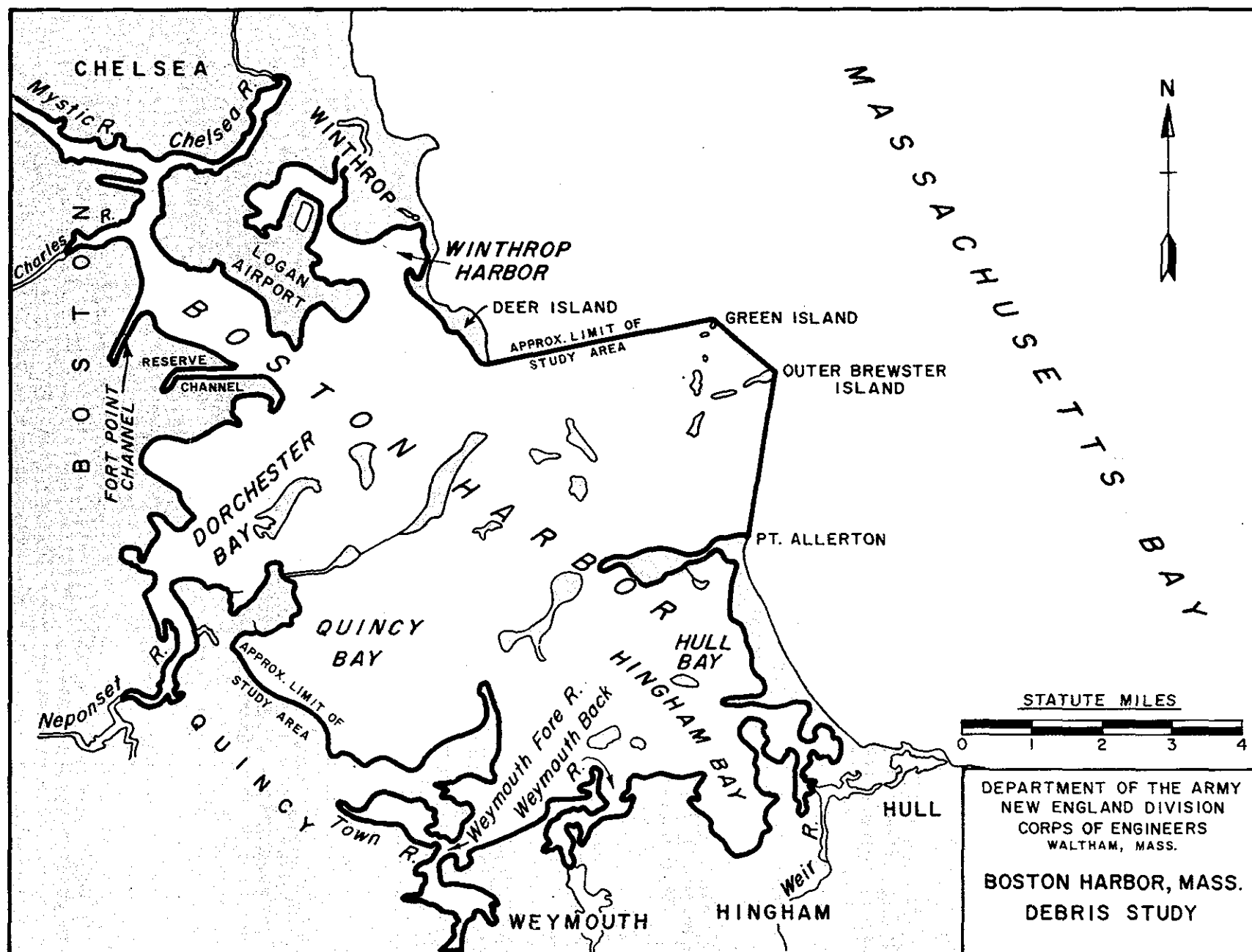
APPROVED.

REMI O. RENIER
Colonel, Corps of Engineers
Division Engineer

DATE:

3 Incl

1. Map
2. Study Cost Est. (PB-6)
3. Work Schedule Chart



STUDY COST ESTIMATE (PB-6)		APPROPRIATION TITLE: General Investigations			NAME OF STUDY Boston Harbor Debris Study
		APPROPRIATION CATEGORY Surveys			
		APPROPRIATION CLASS Navigation Studies			LOCATION Massachusetts
L I N E NO.	UNIFORM COST CLASSIFI- CATION (1)	FEATURE (2)	CURRENT COST ESTIMATE (3)	PREVIOUS COST ESTIMATE (4)	REMARKS (5)
1	501. 01	Preliminary Planning & Public Contacts	\$ 10,300	6,000	Increase due to recent Federal employees pay raise legislation.
2	501. 02	Hydrology Studies			
3	501. 03	Surveying & Mapping	15,000	15,000	
4	501. 04	Materials & Foundations Investigations	3,000	3,000	
5	501. 05	Stream Regulation Studies			
6	501. 06	Design & Cost Estimates	12,000	13,000	
7	501. 07	Economic Studies	10,000	5,000	
8	501. 08	Real Estate Studies	8,000	8,000	
9	501. 09	Special Studies (Legal)	10,000	10,000	
10	501. 10	Preparation of Report	10,000	8,000	
11	501. 11	Supervision & Administration	15,700	17,000	
12		Contingencies	15,000	15,000	
13					
14		TOTAL	\$ 110,000	\$100,000	
15					
16					
DATE PREPARED 29 December 1967		DIVISION New England		DISTRICT	PAGE 1 OF 1

BOSTON HARBOR-DEBRIS STUDY WORK SCHEDULE CHART

FEATURE

PRELIMINARY PLANNING & PUBLIC CONTACTS
 SURVEYING & MAPPING
 MATERIALS & FOUNDATIONS INVESTIGATIONS
 DESIGN & COST ESTIMATES
 ECONOMIC STUDIES
 REAL ESTATE STUDIES
 LEGAL STUDIES
 PREPARATION OF REPORT

